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Subject: Info-Hams Digest V94 #969  
To: Info-Hams

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Today's Topics:

    Weekly Solar Terrestrial Forecast & Review for 26 August

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We trust that readers are intelligent enough to realize that all text  
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Date: Thu, 25 Aug 1994 12:16:05 MDT  
From: ihnp4.ucsd.edu!agate!howland.reston.ans.net!europa.eng.gtefsd.com!  
newsxfer.itd.umich.edu!nntp.cs.ubc.ca!alberta!ve6mgs!usenet@network.ucsd.edu  
Subject: Weekly Solar Terrestrial Forecast & Review for 26 August  
To: info-hams@ucsd.edu

--- SOLAR TERRESTRIAL FORECAST AND REVIEW ---  
      July 22 to August 01, 1994

Report Released by Solar Terrestrial Dispatch  
P.O. Box 357, Stirling, Alberta, Canada  
T0K 2E0  
Accessible BBS System: (403) 756-3008

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A NEW ADDITION TO THE WEEKLY REPORTS

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A new set of graphs have been incorporated into these weekly reports  
and will remain a regular feature of these reports. The graphs plot the  
average 10.7 cm solar radio flux values for various numbers of days. For  
example, the 5-day average 10.7 cm solar radio flux graph plots the

solar flux, averaged over a period of 5 days. Similar plots for 10 and 20 day solar flux averages have also been included.

These new plots can be used to aid in determining shorter-term ionospheric propagation conditions and can be used as input into the various propagation programs (ex. SKYCOM) for shorter-term forecasts of HF radio propagation conditions.

# SOLAR AND GEOPHYSICAL ACTIVITY FORECASTS AT A GLANCE

|           |    | 10.7 cm | HF Propagation |       |       |       |       |       | +/- CON | Mag   | Aurora |       |       |
|-----------|----|---------|----------------|-------|-------|-------|-------|-------|---------|-------|--------|-------|-------|
|           |    | SolrFlx | LO             | MI    | HI    | PO    | SWF   | %MUF  | %K      | Ap    | LO     | MI    | HI    |
|           |    | ---     | -----          | ----- | ----- | ----- | ----- | ----- | -----   | ----- | -----  | ----- | ----- |
| August    | 26 | 072     | G              | G     | F     | F     | 05    | 00    | 75      | 3 12  | NV     | NV    | LO    |
|           | 27 | 073     | G              | G     | F     | F     | 05    | 00    | 75      | 3 12  | NV     | NV    | LO    |
|           | 28 | 073     | G              | G     | F     | F     | 05    | 00    | 75      | 2 10  | NV     | NV    | LO    |
|           | 29 | 073     | G              | G     | F     | F     | 05    | 00    | 70      | 2 10  | NV     | NV    | LO    |
|           | 30 | 073     | G              | G     | F     | F     | 05    | 00    | 70      | 2 10  | NV     | NV    | LO    |
|           | 31 | 073     | G              | G     | F     | F     | 05    | 00    | 70      | 2 10  | NV     | NV    | LO    |
| September | 01 | 073     | G              | G     | F     | F     | 05    | 00    | 70      | 2 10  | NV     | NV    | LO    |
|           | 02 | 073     | G              | G     | F     | F     | 05    | 00    | 70      | 2 10  | NV     | NV    | LO    |
|           | 03 | 073     | G              | G     | F     | F     | 05    | 00    | 70      | 2 10  | NV     | NV    | LO    |
|           | 04 | 076     | G              | G     | F     | F     | 05    | 00    | 65      | 2 10  | NV     | NV    | LO    |

## PEAK PLANETARY 10-DAY GEOMAGNETIC ACTIVITY OUTLOOK (26 AUG - 04 SEP)

|                   |                              |     |     |     |     |     |     |     |     |     |           |            |
|-------------------|------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----------|------------|
| EXTREMELY SEVERE  |                              |     |     |     |     |     |     |     |     |     |           | HIGH       |
| VERY SEVERE STORM |                              |     |     |     |     |     |     |     |     |     |           | HIGH       |
| SEVERE STORM      |                              |     |     |     |     |     |     |     |     |     |           | MODERATE   |
| MAJOR STORM       |                              |     |     |     |     |     |     |     |     |     |           | LOW - MOD. |
| MINOR STORM       |                              |     |     |     |     |     |     |     |     |     |           | LOW        |
| VERY ACTIVE       |                              |     |     |     |     |     |     |     |     |     |           | NONE       |
| ACTIVE            |                              |     |     |     |     |     |     |     |     |     |           | NONE       |
| UNSETTLED         | *                            | *   | *   | *   | *   | *   | *   | *   | *   | *   | *         | NONE       |
| QUIET             | ***                          | *** | *** | *** | *** | *** | *** | *** | *** | *** | ***       | NONE       |
| VERY QUIET        | ***                          | *** | *** | *** | *** | *** | *** | *** | *** | *** | ***       | NONE       |
| -----             |                              |     |     |     |     |     |     |     |     |     |           |            |
| Geomagnetic Field | Fri                          | Sat | Sun | Mon | Tue | Wed | Thu | Fri | Sat | Sun | Anomaly   |            |
| Conditions        | Given in 8-hour UT intervals |     |     |     |     |     |     |     |     |     | Intensity |            |

CONFIDENCE LEVEL: 70%

NOTES:

Predicted geomagnetic activity is based heavily on recurrent phenomena. Transient energetic solar events cannot be predicted reliably over periods in excess of several days. Hence, there may be some deviations from the predictions due to the unpredictable transient solar component.

# 60-DAY GRAPHICAL ANALYSIS OF GEOMAGNETIC ACTIVITY

|    |  |       |            |        |  |              |            |            |          |    |            |         |    |  |  |
|----|--|-------|------------|--------|--|--------------|------------|------------|----------|----|------------|---------|----|--|--|
| 28 |  | ----- |            |        |  |              |            |            |          |    |            |         | A  |  |  |
| 27 |  | A     |            |        |  |              |            |            |          |    |            |         | A  |  |  |
| 25 |  | A     |            |        |  | A            |            |            |          |    |            |         | A  |  |  |
| 24 |  | A     | A          |        |  | A            | A          |            |          |    |            |         | A  |  |  |
| 22 |  | A     | A          |        |  | A            | A          |            |          |    |            |         | A  |  |  |
| 21 |  | A     | AA         |        |  | A            | A          |            |          |    |            |         | AA |  |  |
| 20 |  | A     | A          | AA     |  | A            | A          |            |          |    |            |         | AA |  |  |
| 18 |  | A     | A          | AA     |  | A            | A          |            |          |    |            |         | AA |  |  |
| 17 |  | A     | AAAA       |        |  | AAAA         |            | A          |          |    | A          | AA      |    |  |  |
| 15 |  | A     | AAAA       | A      |  | AAAA         |            | A          |          |    | AAAAAA     |         |    |  |  |
| 14 |  | A     | AAAAAU     | A      |  | AAAA         |            | A          |          |    | AAAAAA     |         |    |  |  |
| 13 |  | A     | AAAAAU     | A      |  | AAAA         | U          | U          | U        | A  |            | AAAAAA  |    |  |  |
| 11 |  | A     | AAAAAU     | UA     |  | AAAA         | U          | U          | U        | AU |            | AAAAAA  |    |  |  |
| 10 |  | A     | AAAAAUU    | UA     |  | AAAAUU       | U          | U          | UAU      |    | AAAAAAU    |         |    |  |  |
| 8  |  | A     | AAAAAUU    | UA     |  | AAAAUU       | U          | U          | UAUU     |    | AAAAAAU    |         |    |  |  |
| 7  |  | A     | AAAAAUU    | UA     |  | AAAAUU       | U          | U          | UAUUUU   |    | AAAAAAU    | UU      |    |  |  |
| 6  |  | A     | AAAAAUUUUU | AUQ    |  | AAAAUUUUUUUU | QUUUUUUUUU | Q          |          |    | AAAAAAUUU  | UUUU    |    |  |  |
| 4  |  | A     | AAAAAUUUUU | AUQQQ  |  | AAAAUUUUUUUU | QUUUUUUUUU | QUUUUUUUUU | QQ       | Q  | AAAAAAUUUU | QUUUUUQ |    |  |  |
| 3  |  | A     | AAAAAUUUUU | AUQQQQ |  | AAAAUUUUUUUU | QUUUUUUUUU | QUUUUUUUUU | QQQQQQ   | Q  | AAAAAAUUUU | QUUUUUQ |    |  |  |
| 1  |  | A     | AAAAAUUUUU | AUQQQQ |  | AAAAUUUUUUUU | QUUUUUUUUU | QUUUUUUUUU | QQQQQQQQ | Q  | AAAAAAUUUU | QUUUUUQ |    |  |  |
| 0  |  | A     | AAAAAUUUUU | AUQQQQ |  | AAAAUUUUUUUU | QUUUUUUUUU | QUUUUUUUUU | QQQQQQQQ | Q  | AAAAAAUUUU | QUUUUUQ |    |  |  |

Chart Start Date: Day #178

## NOTES:

This graph is determined by plotting the greater of either the planetary A-index or the Boulder A-index. Graph lines are labelled according to the severity of the activity which occurred on each day. The left-hand column represents the associated A-Index for that day.

Q = Quiet, U = Unsettled, A = Active, M = Minor Storm,

J = Major Storm, and S = Severe Storm.

## CUMULATIVE GRAPHICAL CHART OF THE 10.7 CM SOLAR RADIO FLUX

|     |  |       |  |  |  |  |  |  |  |  |  |  |   |  |
|-----|--|-------|--|--|--|--|--|--|--|--|--|--|---|--|
| 090 |  | ----- |  |  |  |  |  |  |  |  |  |  |   |  |
| 089 |  |       |  |  |  |  |  |  |  |  |  |  | * |  |

```

088 |          *                      *
087 |      *      *                      *
086 |      * *    * * * * *            *
085 |      * **   * * * * *            *
084 |      * **   * * * * *            **
083 |      * * * * * * * * * *          **
082 |      * * * * * * * * * *          **
081 |      * * * * * * * * * *          ****
080 |      * * * * * * * * * *          ****
079 |      * * * * * * * * * *          ****
078 |      * * * * * * * * * *          * * * * *
077 |      * * * * * * * * * *          * * * * *
076 |      * * * * * * * * * *          * * * * *
075 |      * * * * * * * * * *          * * * * *
074 | * * * * * * * * * * * * * * * *
073 | * * * * * * * * * * * * * * * *
072 | * * * * * * * * * * * * * * * * **
071 | * * * * * * * * * * * * * * * *
070 | * * * * * * * * * * * * * * * *

```

-----

Chart Start: Day #177

# GRAPHICAL ANALYSIS OF THE 5-DAY AVERAGE SOLAR FLUX

```

087 |
086 |          **
085 |          * * * * *
084 |          * * * * *
083 |          * * * * *
082 |          * * * * *          **
081 |          * * * * *          ****
080 |          * * * * *          ****
079 |          * * * * *          ****
078 |          * * * * *          ****
077 |          * * * * *          ****
076 |          * * * * *          ****
075 |          * * * * *          * * * * *
074 |          * * * * *          * * * * *
073 | * * * * * * * * * * * * * * * *
072 | * * * * * * * * * * * * * * * *
071 | * * * * * * * * * * * * * * * *

```

-----

Chart Start: Day #177

# GRAPHICAL ANALYSIS OF THE 10-DAY AVERAGE SOLAR FLUX

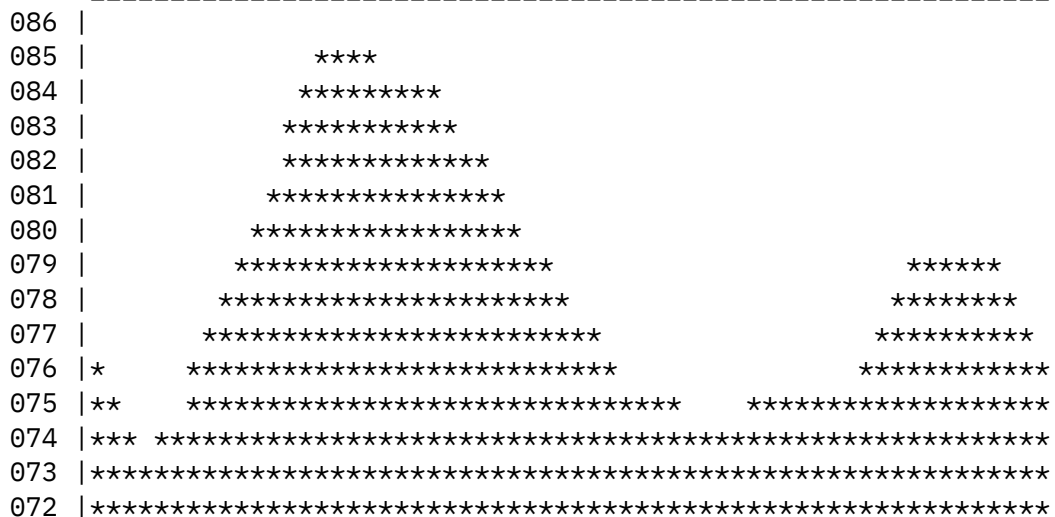


Chart Start: Day #177

# GRAPHICAL ANALYSIS OF THE 20-DAY AVERAGE SOLAR FLUX



Chart Start: Day #177

# GRAPHICAL ANALYSIS OF 90-DAY AVERAGE SOLAR FLUX



```

079 | *****
078 | *****
077 | *****

```

-----

Chart Start: Day #177

NOTES:

The 10.7 cm solar radio flux is plotted from data reported by the Penticton Radio Observatory (formerly the ARO from Ottawa). High solar flux levels denote higher levels of activity and a greater number of sunspot groups on the Sun.

CUMULATIVE GRAPHICAL CHART OF SUNSPOT NUMBERS

```

107 |
102 |      *
097 |      *
092 |     **
087 |    *  **  *
082 |    ** *** *
077 |    ** ***** *
072 |    ***** ***          *  *
067 |    *  ***** ***          *  *
062 |    *  ***** ***          *  ****
057 |    **** *****          *****
052 |    **** *****          *****
047 |    ***** *****          ***** *
042 |    ***** *****          ***** *
037 |    *****          ***** **
032 |    *****          *  ***** **
027 |    *****          *  **  ***** **
022 |    *****          *** * ** **  ***** **
017 |    *****          *** * ***** **
012 |    *****
007 |    *****

```

-----

Chart Start: Day #179

NOTES:

The graphical chart of sunspot numbers is created from the daily sunspot number counts as reported by the SESC.

HF RADIO SIGNAL PROPAGATION PREDICTIONS (26 AUG - 04 SEP)

### High Latitude Paths

|                                     |                |                                 |       |       |       |       |       |       |       |       |       |       |
|-------------------------------------|----------------|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| CONFIDENCE<br>LEVEL<br>-----<br>70% | EXTREMELY GOOD |                                 |       |       |       |       |       |       |       |       |       |       |
|                                     | VERY GOOD      |                                 |       |       |       |       |       |       |       |       |       |       |
|                                     | GOOD           |                                 |       |       |       |       |       |       |       |       |       |       |
|                                     | FAIR           | ***                             | ***   | ***   | ***   | ***   | ***   | ***   | ***   | ***   | ***   | ***   |
|                                     | POOR           |                                 |       |       |       |       |       |       |       |       |       |       |
|                                     | VERY POOR      |                                 |       |       |       |       |       |       |       |       |       |       |
|                                     | EXTREMELY POOR |                                 |       |       |       |       |       |       |       |       |       |       |
| -----                               |                | -----                           | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
|                                     | PROPAGATION    | Fri                             | Sat   | Sun   | Mon   | Tue   | Wed   | Thu   | Fri   | Sat   | Sun   |       |
|                                     | QUALITY        | Given in 8 Local-Hour Intervals |       |       |       |       |       |       |       |       |       |       |

### Middle Latitude Paths

|                                     |                |                                 |     |     |     |     |     |     |     |     |     |     |     |
|-------------------------------------|----------------|---------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| CONFIDENCE<br>LEVEL<br>-----<br>75% | EXTREMELY GOOD |                                 |     |     |     |     |     |     |     |     |     |     |     |
|                                     | VERY GOOD      |                                 |     |     |     |     |     |     |     |     |     |     |     |
|                                     | GOOD           | ***                             | *** | *** | *** | *** | *** | *** | *** | *** | *** | *** | *** |
|                                     | FAIR           |                                 |     |     |     |     |     |     |     |     |     |     |     |
|                                     | POOR           |                                 |     |     |     |     |     |     |     |     |     |     |     |
|                                     | VERY POOR      |                                 |     |     |     |     |     |     |     |     |     |     |     |
|                                     | EXTREMELY POOR |                                 |     |     |     |     |     |     |     |     |     |     |     |
| -----                               |                |                                 |     |     |     |     |     |     |     |     |     |     |     |
|                                     | PROPAGATION    | Fri                             | Sat | Sun | Mon | Tue | Wed | Thu | Fri | Sat | Sun |     |     |
|                                     | QUALITY        | Given in 8 Local-Hour Intervals |     |     |     |     |     |     |     |     |     |     |     |

### Low Latitude Paths

|                                     |                |                                 |       |       |       |       |       |       |       |       |       |       |       |
|-------------------------------------|----------------|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| CONFIDENCE<br>LEVEL<br>-----<br>80% | EXTREMELY GOOD |                                 |       |       |       |       |       |       |       |       |       |       |       |
|                                     | VERY GOOD      |                                 |       |       |       |       |       |       |       |       |       |       |       |
|                                     | GOOD           | ***                             | ***   | ***   | ***   | ***   | ***   | ***   | ***   | ***   | ***   | ***   | ***   |
|                                     | FAIR           |                                 |       |       |       |       |       |       |       |       |       |       |       |
|                                     | POOR           |                                 |       |       |       |       |       |       |       |       |       |       |       |
|                                     | VERY POOR      |                                 |       |       |       |       |       |       |       |       |       |       |       |
|                                     | EXTREMELY POOR |                                 |       |       |       |       |       |       |       |       |       |       |       |
| -----                               |                | -----                           | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| PROPAGATION<br>QUALITY              |                | Fri                             | Sat   | Sun   | Mon   | Tue   | Wed   | Thu   | Fri   | Sat   | Sun   |       |       |
|                                     |                | Given in 8 Local-Hour Intervals |       |       |       |       |       |       |       |       |       |       |       |

#### NOTES:

##### NORTHERN HEMISPHERE

High latitudes  $\geq 55$  deg. N. | Middle latitudes  $\geq 40 < 55$  deg. N. | Low latitudes  $< 40$  deg. N.

##### SOUTHERN HEMISPHERE

High latitudes  $\geq 55$  deg. S. | Middle latitudes  $\geq 30 < 55$  deg. S. | Low latitudes  $< 30$  deg. S.

# AURORAL ACTIVITY PREDICTIONS (26 AUG - 04 SEP)

## High Latitude Locations

|                                     |                |                                     |     |     |     |     |     |     |     |     |     |     |
|-------------------------------------|----------------|-------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| CONFIDENCE<br>LEVEL<br>-----<br>70% | EXTREMELY HIGH |                                     |     |     |     |     |     |     |     |     |     |     |
|                                     | VERY HIGH      |                                     |     |     |     |     |     |     |     |     |     |     |
|                                     | HIGH           |                                     |     |     |     |     |     |     |     |     |     |     |
|                                     | MODERATE       |                                     |     |     |     |     |     |     |     |     |     |     |
|                                     | LOW            | *                                   | *   | *   | *   | **  | **  | **  | *** | *** | *** |     |
|                                     | NOT VISIBLE    | ***                                 | *** | *** | *** | *** | *** | *** | *** | *** | *** |     |
|                                     | -----          | ---                                 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|                                     | AURORAL        | Fri                                 | Sat | Sun | Mon | Tue | Wed | Thu | Fri | Sat | Sun |     |
|                                     | INTENSITY      | Eve.Twilight/Midnight/Morn.Twilight |     |     |     |     |     |     |     |     |     |     |

## Middle Latitude Locations

|                                     |                |                                     |     |     |     |     |     |     |     |     |     |     |
|-------------------------------------|----------------|-------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| CONFIDENCE<br>LEVEL<br>-----<br>80% | EXTREMELY HIGH |                                     |     |     |     |     |     |     |     |     |     |     |
|                                     | VERY HIGH      |                                     |     |     |     |     |     |     |     |     |     |     |
|                                     | HIGH           |                                     |     |     |     |     |     |     |     |     |     |     |
|                                     | MODERATE       |                                     |     |     |     |     |     |     |     |     |     |     |
|                                     | LOW            |                                     |     |     |     |     |     |     |     |     |     |     |
|                                     | NOT VISIBLE    | ***                                 | *** | *** | *** | *** | *** | *** | *** | *** | *** | *** |
| -----                               |                | ---                                 | --- | --- | --- | --- | --- | --- | --- | --- | --- |     |
|                                     | AURORAL        | Fri                                 | Sat | Sun | Mon | Tue | Wed | Thu | Fri | Sat | Sun |     |
|                                     | INTENSITY      | Eve.Twilight/Midnight/Morn.Twilight |     |     |     |     |     |     |     |     |     |     |

## Low Latitude Locations

|                                     |                |                                     |     |     |     |     |     |     |     |     |     |     |
|-------------------------------------|----------------|-------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| CONFIDENCE<br>LEVEL<br>-----<br>95% | EXTREMELY HIGH |                                     |     |     |     |     |     |     |     |     |     |     |
|                                     | VERY HIGH      |                                     |     |     |     |     |     |     |     |     |     |     |
|                                     | HIGH           |                                     |     |     |     |     |     |     |     |     |     |     |
|                                     | MODERATE       |                                     |     |     |     |     |     |     |     |     |     |     |
|                                     | LOW            |                                     |     |     |     |     |     |     |     |     |     |     |
|                                     | NOT VISIBLE    | ***                                 | *** | *** | *** | *** | *** | *** | *** | *** | *** | *** |
| -----                               |                |                                     |     |     |     |     |     |     |     |     |     |     |
|                                     | AURORAL        | Fri                                 | Sat | Sun | Mon | Tue | Wed | Thu | Fri | Sat | Sun |     |
|                                     | INTENSITY      | Eve.Twilight/Midnight/Morn.Twilight |     |     |     |     |     |     |     |     |     |     |

### NOTE:

Version 2.00c of our Professional Dynamic Auroral Oval Simulation Software Package is now available. This professional software is particularly valuable to radio communicators, aurora photographers, educators, and astronomers. For more information regarding this software, contact: "Oler@Rho.Uleth.CA", or "COler@Solar.Stanford.Edu".



For more information regarding these charts, send a request for the document, "Understanding Solar Terrestrial Reports" to: "Oler@Rho.Uleth.Ca" or to: "COler@Solar.Stanford.Edu". This document, as well as others and related data/forecasts exist on the STD BBS at: (403) 756-3008.

\*\* End of Report \*\*

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End of Info-Hams Digest V94 #969

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